REMARKS

In response to the Office Action, Applicant respectfully requests the Examiner to reconsider the above-captioned application in view of the foregoing amendments and the following comments.

Discussion of Claim Amendments

Independent Claims 1, 7, 11-13, 15-20, 25, 28-30, and 32-36 have been amended. Claims 1-58 are pending in this application. The amendments to the claims do not introduce any new matter. Entry of the amendments is respectfully requested.

Discussion of Claim Rejections Under 35 U.S.C. § 103(a)

In the Office Action, the Examiner rejected Claims 1-4, 6-8, 11, 12, 16, 19-22, 24-26, 28-31, 33, 36, and 39-58 as being unpatentable over Kim et al. (U.S. Patent No. 5,777,680, hereinafter "Kim") in view of Chan et al. (U.S. Patent No. 5,812,197, hereinafter "Chan"). Claims 13-15, 17, 18, 32, were rejected as being unpatentable over Kim in view of Chan and further in view of Sun et al. (U.S. Patent No. 5,969,764, hereinafter"Sun"). Claims 5 and 23 were rejected as being unpatentable over Kim in view of Chan and further in view of Lee et al. (U.S. Patent No. 6,023,296, hereinafter "Lee"). Claim 9 was rejected as being unpatentable over Kim in view of Chan and further in view of Krause et al. (U.S. Patent No. 5,093,720, hereinafter "Krause").

Applicant respectfully disagrees with these rejections. Applicant respectfully submits that the cited art fails to teach or suggest at least one limitation from each of the above-listed claims.

Discussion of Patentability of Independent Claims 1, 7, 11-13, 15-20, 25, 28-30, and 32-36

The amended Claim 1 recites in part: "performing a second sub-encoding on the first sub-encoded block, the second sub-encoding adapting at least one encoding parameter based upon characteristic indicative of an energy content of the first sub-encoded part of the current frame, the characteristic being determined by prediction, without using the first sub-encoded block and without using the set of blocks of the current frame, and at least in part from the frames of the

sequence only those frames that are a reference frame." Similar types of limitations are recited in the other independent claims.

In contrast, Kim is generally directed video encoding system. In the Office Action on page 4, the Examiner acknowledged that "Kim fails to disclose the second sub encoding having a characteristic indicative of an energy content as claimed." However, the Examiner took the position that this feature is described by Chan. Applicant respectfully disagrees. Applicant notes that the second encoding, such as is recited in independent Claim 1, adapts "at least one encoding parameter based upon characteristic indicative of an energy content of the first sub-encoded part of the current frame, the characteristic being determined by prediction, **without using the first sub-encoded block <u>and</u> without using the set of blocks of the current frame.**" In contrast, Chan describes a decision processor that adapts an encoding process <u>while using</u> data of the current frame. In particular, the decision processor of Chan creates decision criteria, "Correlation Factor (CF)", that is used to select a macroblock during the encoding process. However, the value of CV is used from original pixel data of the current frame undergoing encoding. *See e.g.*, col. 6, lines 1-14.

In addition, the Examiner as stated on Page 1 of the Office Action that it would be obvious to "take the apparatus taught by Kim and add the energy calculations taught by Chan in order to obtain an apparatus that helps improve the quality of an image." The embodiment of the invention as recited in Claim 1 does not improve the quality of an image. The use of a predicted characteristic as recited in Claim 1 will not lead to an improvement in image quality. On the contrary, using predictions rather then the real value will often lead do a decrease in quality since the predication can never be more accurate then the real value and it is often less accurate then the real value. The use of the predicted characteristic may improve the efficiency of the encoding process but it can not improve the quality of the image.

Since Kim and Chan in isolation and in combination wholly fail to disclose "at least one encoding parameter based upon characteristic indicative of an energy content of the first sub-encoded part of the current frame, the characteristic being determined by prediction, without using the first sub-encoded block and without using the set of blocks of the current frame" Applicant respectfully submits that Claim 1 is in condition for allowance.

Independent Claims 7, 11, 12, 13, 15-20, 25, 28-30, and 32-36 have been amended to include similar features. Applicant respectfully submits that Claims 7, 11, 12, 13, 15-20, 25, 28-30, and 32-36 are also in condition for allowance.

Discussion of Patentability of Dependent Claims

Dependent Claims 2-6, 8-10, 14, 21-24, 26, 27, 31, and 39-58 depend from independent Claims Claim 1, 7, 11, 12, 13, 15-20, 25, 28-30, and 32-36, and further define additional technical features of the present invention. In view of the patentability of their base claims, and in further view of the additional technical features, Applicant respectfully submits that the dependent claims are patentable over the prior art reference. Furthermore, Applicant does not necessarily agree with the characterizations of the prior art made by the Examiner in rejecting the dependent claims.

Although dependent Claims 3, 4, 8, 22, 26, and 31 depend from independent Claim 1, 7, 20, 25 and 30 which places them in condition for allowance, Applicant wishes to further distinguish dependent Claims 3, 4, 8, 22, 26, and 31 from the prior art cited by the Examiner.

The Examiner has rejected dependent Claims 3, 8, and 26 as being anticipated by Kim. The Examiner has stated on page 5 of the Office action that "Kim teaches of computing of the quantity identifies the time elapses between the current frame and the reference frame or frames." However, Claims 3, 8, and 22, when taken as a whole with their corresponding independent claims teach that the "characteristic" is indicative of an energy content, is determined by prediction, and identifies the time elapses between the current frame and the reference frame or frames. As the above-limitations are not disclosed by Kim, dependent claims 3, 8, and 22 are in condition for allowance.

The Examiner has rejected dependent claims 4, 22, and 31 as being anticipated by Kim. The Examiner has stated on Page 3 of the office action that Kim "discloses transmitting data over a network or transmission channel" and that Kim further discloses "encoding the video based on the bandwidth. With respect to dependent Claim 4, it recites: "wherein the encoded frames are transmitted over a transmission channel and wherein the adaptive encoding method compensates for channel bandwidth limitations and adapts the second sub-encoding parameters based at least in part upon the characteristic." In the Office Action, the Examiner stated that the feature was

disclosed by Kim, which teaches the use of a buffer full flag representing the state of a buffer 600 when encoding data. Applicant respectfully submits that the buffer 600 does not correspond with the recited channel bandwidth limitation. Kim discloses that the quantization parameter is used to control the buffer and the state of the buffer is inputted to the arithmetic unit. *Kim at col. 7, lines 17-42.* However, the channel disclosed in Kim flows to the arithmetic unit which is part of the encoder. Kim does not disclose that the buffer or the quantization parameter is used to compensate for bandwidth limitations between an encoder and a decoder. The recited channel bandwidth in Claim 4 relates to the communication pathway **between an encoder and a decoder**. As recited in Claim 4, the encoded frames are transmitted over the channel. The frames have already been encoded and are now being transmitted to a decoder over the channel. As Kim does not teach this feature, Applicant respectfully submits that Claim 4 is in condition for allowance. Because Claims 26 and 31 include similar features and Applicant respectfully submits that Claims 26 and 31 are also in condition for allowance.

No Disclaimers or Disavowals

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, Applicant is not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. The Applicant reserves the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that Applicant has made any disclaimers or disavowals of any subject matter supported by the present application.

CONCLUSION

Applicant has endeavored to address all of the Examiner's concerns as expressed in the outstanding Office Action. In view of Applicant's foregoing amendments and remarks, it is respectfully submitted that the present application is in condition for allowance. If the Examiner

has any questions which may be answered by telephone, he is invited to call the undersigned directly.

Respectfully submitted,

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